



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN THE APPLICATION OF:

**WILLIAM J. BORLAND ET AL.**

CASE NO.: **EL0497 US NA**

APPLICATION NO.: **10/725,888**

CONFIRMATION NO.:

GROUP ART UNIT:

EXAMINER:

FILED: **DECEMBER 2, 2003**

FOR: **PRINTED WIRING BOARDS HAVING CAPACITORS AND METHODS OF  
MAKING THEREOF**

**INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In compliance with 37 CFR 1.97 and 1.98, Applicants would like to bring to the attention of the U.S. Patent and Trademark Office information that may be helpful in the examination of the above-identified patent application. All of the information is listed on an attached Forms PTO/SB/08.

Should any fee be required in connection with the filing of this Information Disclosure Statement, please charge such fee to Deposit Account No. 04-1928 (E. I. du Pont de Nemours and Company).

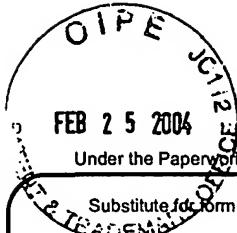
Respectfully submitted,



**REBECCA W. TULLOCH**  
ATTORNEY FOR APPLICANT S  
Registration No.: 36,297  
Telephone: (302) 892-7911  
Facsimile: (302) 992-7343

Dated: 2/23/2004

Enclosures



FEB 25 2004

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Approved for use through 07/31/2006. OMB 0651-0031  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE  
A collection of information unless it contains a valid OMB control number.

Substitute for Form 1449/PTO

## **INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

*(Use as many sheets as necessary)*

Sheet 1 of 4

 <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(Use as many sheets as necessary)</i>				<b>Complete if Known</b>	
Sheet	1	of	4	Application Number	10/725,888
				Filing Date	December 2, 2003
				First Named Inventor	William J. Borland
				Art Unit	
				Examiner Name	
				Attorney Docket Number	EL0497 US NA

## U. S. PATENT DOCUMENTS

## FOREIGN PATENT DOCUMENTS

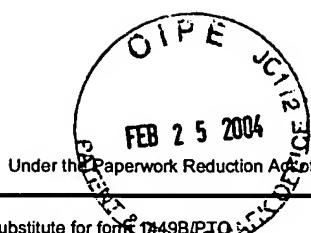
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)				
		JP 2003-92460	05-31-2002			
		JP 2-153589	06-13-1990	Ibiden KK		
		JP 2001-168491	12-09-1999			

**Examiner Signature** \_\_\_\_\_ **Date Considered** \_\_\_\_\_

**\*EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.



PTO/SB/08b (08-03)

Approved for use through 06/30/2006. OMB 0651-0031  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1A49B/PTO-1476

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet

2

of

4

Complete if Known	
Application Number	10/725,888
Filing Date	December 2, 2003
First Named Inventor	William J. Borland
Art Unit	
Examiner Name	

Attorney Docket Number

EL0497 US NA

### NON PATENT LITERATURE DOCUMENTS

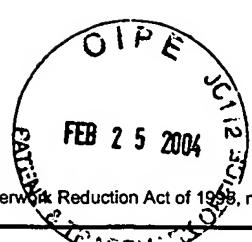
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		JOHN FELTEN AND SAUL FERGUSON, Embedded Ceramic Resistors and Capacitors for PWB, IP Printed Circuit Expo, San Diego, CA, April 2000.	<input type="checkbox"/>
		JOHN J. FELTEN AND SAUL FERGUSON, Ceramic Resistors and Capacitors Embedded in PWB, IPC, San Diego, April 5, 2000.	<input type="checkbox"/>
		JOHN J. FELTEN AND SAUL FERGUSON, Ceramic Resistors and Capacitors Embedded in PWB, IMAPS, Denver, April 29, 2000.	<input type="checkbox"/>
		JOHN J. FELTEN AND WILLIAM J. BORLAND, Embedded Ceramic Passives in PWB: Process Development, IPC Printed Circuit Expo, Anaheim, CA, April 2001.	<input type="checkbox"/>
		JOHN J. FELTEN AND WILLIAM J. BORLAND, Ceramic Resistors and Capacitors Embedded in PWB's, IPC Expo, April 3, 2001.	<input type="checkbox"/>
		WILLIAM BORLAND, Designing for Embedded Passives, Printed Circuit Design, August 2001.	<input type="checkbox"/>

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.  
This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO

INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet

3

of

4

Complete If Known	
Application Number	10/725,888
Filing Date	December 2, 2003
First Named Inventor	William J. Borland
Art Unit	
Examiner Name	

Attorney Docket Number

EL0497 US NA

## NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		WILLIAM BORLAND, JOHN J. FELTEN, Thick Film Ceramic Capacitors and Resistors inside Printed Circuit Boards, 34th International Symposium on Microelectronics (IMAPS), Oct. 9-11th, 2001, Baltimore, MD.	<input type="checkbox"/>
		JOHN FELTEN, RICHARD SNOGREN, JIMING ZHOU, Embedded Ceramic Resistors and Capacitors in PWB: Process and Performance, Fall IPC Meeting, October 11, 2001, Orlando, FL.	<input type="checkbox"/>
		WILLIAM J. BORLAND AND SAUL FERGUSON, Embedded Passive Components in Printed Wiring Boards, a Technology Review, To be published in CircuiTree Magazine, 2001.	<input type="checkbox"/>
		JIMING ZHOU, JOHN D. MYERS AND JOHN J. FELTEN, Embedded Passives Technology for PCBs: Materials, Design, and Process, IMAPS 2002 Conference, Denver, CO, Sept. 4-6, 2002.	<input type="checkbox"/>
		JOHN J. FELTEN, Electronic Circuits World Convention, Paper number IPC31, Advanced Embedded Passives Technologies - Putting Ceramic Components into Organic PWBs.	<input type="checkbox"/>
		WILLIAM BORLAND, JOHN J. FELTEN, SAUL FERGUSON, ALTON B. JONES AND ANGELA A. LAWRENCE, Embedded Singulated Ceramic Passives in Printed Wiring Boards, IMAPS Advanced Technology Workshop on Passive Integration, Ogunquit, ME, June 19-21, 2002.	<input type="checkbox"/>

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



PTO/SB/08b (08-03)

Approved for use through 06/30/2006. OMB 0651-0031  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet

4

of

4

### Complete if Known

Application Number	10/725,888
Filing Date	December 2, 2003
First Named Inventor	William J. Borland
Art Unit	
Examiner Name	

Attorney Docket Number EL0497 US NA

### NON PATENT LITERATURE DOCUMENTS

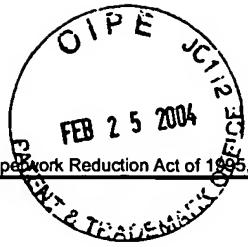
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		DR. KIM FJELDSTED AND STACEY L. CHASE, EMBEDDED PASSIVES: LASER TRIMMED RESISTORS, CIRCUITREE, Volume 70, March 2002.	<input type="checkbox"/>
			<input type="checkbox"/>

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



## Certificate of Mailing under 37 CFR 1.8

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

on February 23, 2004  
Date

M. Kay Lilly  
Signature

M. Kay Lilly

Typed or printed name of person signing Certificate

Note: Each paper must have its own certificate of mailing, or this certificate must identify each submitted paper.

10/725,888  
EL0497USNA  
INFORMATION DISCLOSURE STATEMENT  
PTO/SB/08A FORM  
PTO/SB/08B FORMS (3)  
COPIES OF CITED REFERENCES (23)  
RETURN POSTAL RECEIPT CARD

This collection of information is required by 37 CFR 1.8. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.8 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.